

**OGMCOAL - Horizon Mine - Water Quality Memo WQ09-2**

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**From:** Kevin Lundmark  
**To:** Kit Pappas  
**Date:** 3/8/2010 2:36 PM  
**Subject:** Horizon Mine - Water Quality Memo WQ09-2  
**CC:** OGMCOAL  
**Attachments:** Horizon\_WQ09-2.pdf

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Kit,  
FYI, attached please find a copy of the Water Quality Memo for 2nd Quarter 2009 for the Horizon Mine. Please don't hesitate to contact me with any questions about this memo.  
Thanks,  
Kevin

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# WATER QUALITY M E M O R A N D U M

## Utah Coal Regulatory Program

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February 17, 2010

TO: Internal File

THRU: James D. Smith, Permit Supervisor *DS 02/17/10*

FROM: Kevin Lundmark, Environmental Scientist II *KWL*

RE: 2009 2nd Quarter Water Monitoring, Hidden Splendor Resources, Inc., Horizon Mine, C/007/0020-WQ09-2, Task ID #3320

The Horizon Mine is operational and mining coal. The water monitoring plan is outlined in Chapter 7 - Hydrology of the MRP, which was most recently updated in June 2005. Surface and groundwater monitoring is required for the Horizon Mine under the operation plan, and monitoring procedures and parameters are discussed in MRP Section 7.1.5 (groundwater) and Section 7.2.2.3 (surface water). UPDES permit UTG040019 authorizes discharges from two outfalls and expires on April 30, 2013.

This report was prepared from monitoring data queried from the UDOGM database. The data that support this report were collected and submitted to the database by the Operator. The data were downloaded into file O:\007020.HZN\Water Quality\Spreadsheets\HZN\_10Feb2010.xls for this review.

**1. Were data submitted for all of the MRP required sites?**

**Springs**      YES [X]      NO [ ]

Springs SP-1, SP-2, SP-4, SP-9 (Jewkes Spring), 2-6-W (Homestead Spring) and GV-70 will be monitored once each calendar quarter (when the springs are accessible) during the operational and reclamation phases. Ground water quality parameters to be checked are outlined in Table 7-2 of the MRP.

All required springs were monitored during second quarter 2009. No flow was reported for spring SP-4. Flows for the other springs ranged from 0.1 gpm at SP-1 to 15 gpm at SP-9 (Jewkes Spring).

**Streams**      YES [X]      NO [ ]

Stations SS-3, SS-5, SS-7, SS-8, SS-10 and SS-11 will be monitored once each quarter (as access conditions permit). Surface water quality parameters are outlined in Table 7-5 of the MRP.

All required stream sites were monitored during second quarter 2009. Flow was reported for all stream sites, with discharges ranging from 4 gpm at SS-11 to 350 gpm at SS-3.

**Wells**            YES [X]        NO [ ]

Water level data will be collected during the operational and reclamation phases from wells HZ-95-1, HZ-95-1S, HZ-95-2, HZ-95-3 and HZ-01-06-1 once each quarter, when accessible.

Well HZ-95-3 was reported as dry during second quarter 2009. Water levels were measured for the other required monitoring wells.

**UPDES**           YES [X]        NO [ ]

Monthly monitoring is required for the UPDES outfalls associated with the mine discharge (001) and sedimentation pond (002).

UPDES sites were monitored monthly for the quarter and all required data submitted.

**2. Were all required parameters reported for each site?**

**Springs**           YES [X]        NO [ ]

**Streams**           YES [X]        NO [ ]

**Wells**            YES [X]        NO [ ]

**UPDES**           YES [X]        NO [ ]

**3. Were irregularities found in the data?**

**Springs**           YES [X]        NO [ ]

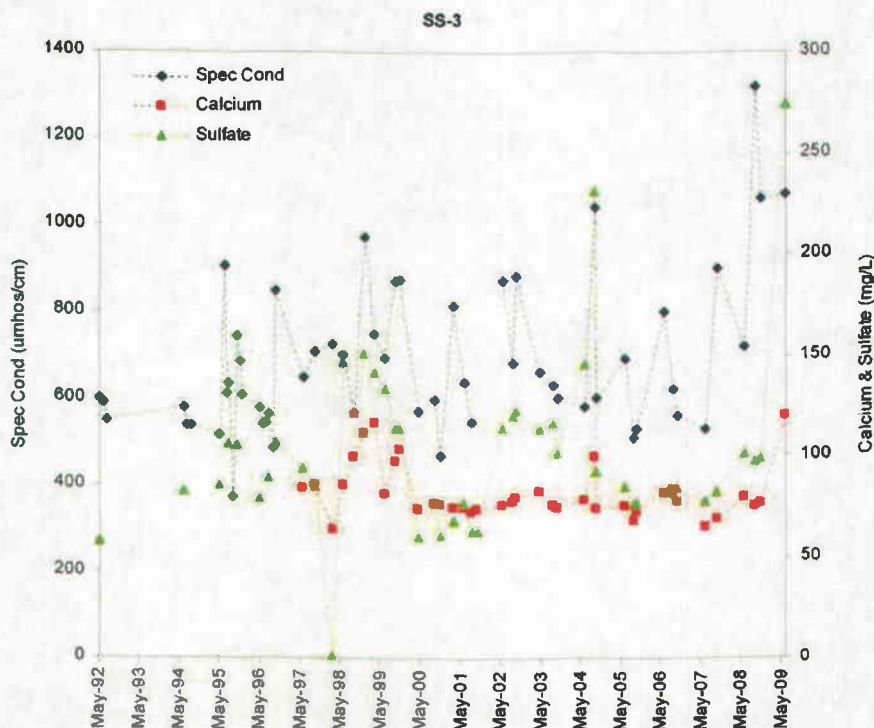
The temperature reported for spring SP-1 on 6/30/2009 was 19.5 degrees C, which exceeds the average measured temperature at this site by greater than two standard deviations. This value was similar to the temperature reported at this site for second quarter 2008 (19.3 degrees C).

The discharge reported at spring SP-2 on 6/30/2009 (8 gpm) is the highest discharge reported to date at this site. The previous maximum measured discharge was 5 gpm, reported for second quarter 2006.

**Streams**      **YES** ☒      **NO** ☐

The temperature reported for stream site SS-10 during second quarter was 14.6 degrees C, which is the second highest temperature reported to date for this monitoring location. The temperatures measured at this location have commonly been greater than 10 degrees C during second and third quarter monitoring events.

Specific conductance, sulfate, and dissolved calcium were elevated by greater than two standard deviations above average values for stream site SS-3 during second quarter 2009. Reported values for these parameters have been highly variable, as shown in the graph below. The time-series data suggest that specific conductance may be slightly increasing at site SS-3.



**Wells**      **YES** ☐      **NO** ☒

**UPDES**      **YES** ☐      **NO** ☒

4. **On what date does the MRP require a five-year resampling of baseline water data.**

Re-sampling due date is third quarter, July-September 2012.

5. **Based on your review, what further actions, if any, do you recommend?**

None

**Does the Mine Operator need to submit more information to fulfill this quarter's monitoring requirements? Yes [ ] No [X]**

6. **Follow-up from last quarter, if necessary.**

**Did the Mine Operator submit all the missing and/or irregular data (datum)?**

None needed.